

What is claimed is:

1. A method of affecting an antifungal activity in a system comprising administering to the system an agent, wherein the agent affects a target gene whereby affecting the antifungal activity in the system, and wherein the target gene is selected from the group consisting of AAC3, ABF1, CDC6, CIK1, COQ7, CPA2, DDR48, FAS1, FUS1, GAL80, GDH2, GRF10, GZF3, HSP12, IME1, IPT1, MAL33, PCL9, PGM2, PHO23, POB1, PPR1, PTP1, SOD2, TRR1, TSA2, UGA1, YFL054C, SKN7, LEU3, AFR1, ARP7, AXL1, CRM1, CSE2, CSE1, FAR1, GPA1, GAL11, HSP82, IPL1, KAR2, MFALPHA2, MSN5, MTR10, NPL3, PSU1, RPS0B, SEC72, SLA2, SNI2, SNF5, SNF6, SNC2, SRP1, SRB4, STE2, STE4, SUP35, SWI3, UBI3, UBI2, VAM3, YDJ1, YCK2, KAR3, SPT4, CRZ1, ZAP1, DAL5, PEX11, HTA1, ZIP1, HTA2, BAR1, GAL80, and YDL182W.
2. The method of claim 1, wherein the target gene is selected from the group consisting of CIK1, YFLO54C, SKN7, DDR48, LEU3, FUS1, and GZF3.
3. The method of claim 1, wherein the target gene is CIK1.
4. The method of claim 1, wherein the agent inhibits the activity of CIK1 and whereby the antifungal activity in the system is increased.
5. The method of claim 1, wherein the target gene is selected from the group consisting of AFR1, ARP7, AXL1, CRM1, CSE2, CSE1, FAR1, GPA1, GAL11, HSP82, IPL1, KAR2, MFALPHA2, MSN5, MTR10, NPL3, PSU1, RPS0B, SEC72, SLA2, SNI2, SNF5, SNF6, SNC2, SRP1, SRB4, STE2, STE4, SUP35, SWI3, UBI3, UBI2, VAM3, YDJ1, and YCK2.
6. The method of claim 1, wherein the target gene is selected from the group consisting of KAR3, SPT4, CRZ1, ZAP1, DAL5, PEX11, HTA1, ZIP1, HTA2,

BAR1, GAL80, and YDL182W.

7. A method of increasing the antifungal activity in a system comprising administering to the system an agent, wherein the agent decreases the activity of a target gene selected from the group consisting of CIK1, YFLO54C, SKN7, DDR48, LEU3, FUS1, and GZF3.

8. A method of increasing the antifungal activity in a system comprising administering to the system an agent, wherein the agent affects a target gene involved in the CIK1 pathway whereby decreasing the activity of CIK1, wherein the target gene is selected from the group consisting of AAC3, ABF1, CDC6, CIK1, COQ7, CPA2, DDR48, FAS1, FUS1, GAL80, GDH2, GRF10, GZF3, HSP12, IME1, IPT1, MAL33, PCL9, PGM2, PHO23, POB1, PPR1, PTP1, SOD2, TRR1, TSA2, UGA1, YFL054C, SKN7, LEU3, AFR1, ARP7, AXL1, CRM1, CSE2, CSE1, FAR1, GPA1, GAL11, HSP82, IPL1, KAR2, MFALPHA2, MSN5, MTR10, NPL3, PSU1, RPS0B, SEC72, SLA2, SNI2, SNF5, SNF6, SNC2, SRP1, SRB4, STE2, STE4, SUP35, SWI3, UBI3, UBI2, VAM3, YDJ1, YCK2, KAR3, SPT4, CRZ1, ZAP1, DAL5, PEX11, HTA1, ZIP1, HTA2, BAR1, GAL80, and YDL182W.

9. The method of claim 8, wherein the target gene is selected from the group consisting of AFR1, ARP7, AXL1, CRM1, CSE2, CSE1, FAR1, GPA1, GAL11, HSP82, IPL1, KAR2, MFALPHA2, MSN5, MTR10, NPL3, PSU1, RPS0B, SEC72, SLA2, SNI2, SNF5, SNF6, SNC2, SRP1, SRB4, STE2, STE4, SUP35, SWI3, UBI3, UBI2, VAM3, YDJ1, and YCK2.

10. The method of claim 8, wherein the target gene is selected from the group consisting of KAR3, SPT4, CRZ1, ZAP1, DAL5, PEX11, HTA1, ZIP1, HTA2, BAR1, GAL80, and YDL182W.

11. A database comprising a plurality of target genes corresponding to an antifungal agent, wherein each target gene is selected from the group consisting of AAC3, ABF1, CDC6, CIK1, COQ7, CPA2, DDR48, FAS1, FUS1, GAL80, GDH2, GRF10, GZF3, HSP12, IME1, IPT1, MAL33, PCL9, PGM2, PHO23, POB1, PPR1, PTP1, SOD2, TRR1, TSA2, UGA1, YFL054C, SKN7, LEU3, AFR1, ARP7, AXL1, CRM1, CSE2, CSE1, FAR1, GPA1, GAL11, HSP82, IPL1, KAR2, MFALPHA2, MSN5, MTR10, NPL3, PSU1, RPS0B, SEC72, SLA2, SNI2, SNF5, SNF6, SNC2, SRP1, SRB4, STE2, STE4, SUP35, SWI3, UBI3, UBI2, VAM3, YDJ1, YCK2, KAR3, SPT4, CRZ1, ZAP1, DAL5, PEX11, HTA1, ZIP1, HTA2, BAR1, GAL80, and YDL182W.
12. The database of claim 11, wherein each target gene is assigned a first identifier identifying its identity and a second identifier identifying its relationship with a target gene in the database.
13. An isolated polynucleotide comprising a target sequence consisting of a partial sequence of a target gene, wherein the target gene is selected from the group consisting of AAC3, ABF1, CDC6, CIK1, COQ7, CPA2, DDR48, FAS1, FUS1, GAL80, GDH2, GRF10, GZF3, HSP12, IME1, IPT1, MAL33, PCL9, PGM2, PHO23, POB1, PPR1, PTP1, SOD2, TRR1, TSA2, UGA1, YFL054C, SKN7, LEU3, AFR1, ARP7, AXL1, CRM1, CSE2, CSE1, FAR1, GPA1, GAL11, HSP82, IPL1, KAR2, MFALPHA2, MSN5, MTR10, NPL3, PSU1, RPS0B, SEC72, SLA2, SNI2, SNF5, SNF6, SNC2, SRP1, SRB4, STE2, STE4, SUP35, SWI3, UBI3, UBI2, VAM3, YDJ1, YCK2, KAR3, SPT4, CRZ1, ZAP1, DAL5, PEX11, HTA1, ZIP1, HTA2, BAR1, GAL80, and YDL182W, and wherein the activity of the partial sequence of the target gene is responsive in a cell to an antifungal agent.
14. The isolated polynucleotide of claim 13, wherein the target sequence is adjacent to a heterologous sequence.

15. The isolated polynucleotide of claim 13, wherein the target gene is selected from the group consisting of CIK1, YFLO54C, SKN7, DDR48, LEU3, FUS1, and GZF3.
- 5 16. The isolated polynucleotide of claim 13, wherein the target gene is CIK1.
17. The isolated polynucleotide of claim 13, wherein the target gene is selected from the group consisting of AFR1, ARP7, AXL1, CRM1, CSE2, CSE1, FAR1, GPA1, GAL11, HSP82, IPL1, KAR2, MFALPHA2, MSN5, MTR10, NPL3, PSU1, RPS0B, SEC72, SLA2, SNI2, SNF5, SNF6, SNC2, SRP1, SRB4, STE2, STE4, SUP35, SWI3, UBI3, UBI2, VAM3, YDJ1, and YCK2.
- 10 18. The isolated polynucleotide of claim 13, wherein the target gene is selected from the group consisting of KAR3, SPT4, CRZ1, ZAP1, DAL5, PEX11, HTA1, ZIP1, HTA2, BAR1, GAL80, and YDL182W.
- 15 19. An isolated polypeptide encoded by the polynucleotide of claim 13.
- 20 20. An antibody binding specifically to the polypeptide of claim 19, wherein the antibody modulates an activity of the polypeptide and wherein the activity is associated with a fungal infection.
21. A vector containing the polynucleotide of claim 13.
- 25 22. A cell containing the polynucleotide of claim 13.
23. A cell containing the vector of claim 21.
- 30 24. An isolated crystalline polypeptide comprising the polypeptide of claim 19.

25. A system containing a plurality of samples, wherein each sample is a target gene selected from the group consisting of AAC3, ABF1, CDC6, CIK1, COQ7, CPA2, DDR48, FAS1, FUS1, GAL80, GDH2, GRF10, GZF3, HSP12, IME1, IPT1, MAL33, PCL9, PGM2, PHO23, POB1, PPR1, PTP1, SOD2, TRR1, TSA2, UGA1, YFL054C, SKN7, LEU3, AFR1, ARP7, AXL1, CRM1, CSE2, CSE1, FAR1, GPA1, GAL11, HSP82, IPL1, KAR2, MFALPHA2, MSN5, MTR10, NPL3, PSU1, RPS0B, SEC72, SLA2, SNI2, SNF5, SNF6, SNC2, SRP1, SRB4, STE2, STE4, SUP35, SWI3, UBI3, UBI2, VAM3, YDJ1, YCK2, KAR3, SPT4, CRZ1, ZAP1, DAL5, PEX11, HTA1, ZIP1, HTA2, BAR1, GAL80, and YDL182W, and wherein the system allows for parallel analysis of each target gene.
26. A system containing a plurality of samples, wherein each sample is a polynucleotide of claim 13 and wherein the system allows for parallel analysis of each sample.
27. A system containing a plurality of samples, wherein each sample is a polypeptide of claim 19 and wherein the system allows for parallel analysis of each sample.
28. The system of claim 25, wherein the system is a high throughput system.
29. The system of claim 26, wherein the system is a high throughput system.
30. The system of claim 27, wherein the system is a high throughput system.
31. A method of screening for a candidate antifungal agent comprising contacting a target with a test agent, wherein the target is selected from the group consisting of AAC3, ABF1, CDC6, CIK1, COQ7, CPA2, DDR48, FAS1, FUS1, GAL80, GDH2, GRF10, GZF3, HSP12, IME1, IPT1,

MAL33, PCL9, PGM2, PHO23, POB1, PPR1, PTP1, SOD2, TRR1,
TSA2, UGA1, YFL054C, SKN7, LEU3, AFR1, ARP7, AXL1, CRM1,
CSE2, CSE1, FAR1, GPA1, GAL11, HSP82, IPL1, KAR2, MFALPHA2,
MSN5, MTR10, NPL3, PSU1, RPS0B, SEC72, SLA2, SNI2, SNF5,
5 SNF6, SNC2, SRP1, SRB4, STE2, STE4, SUP35, SWI3, UBI3, UBI2,
VAM3, YDJ1, YCK2, KAR3, SPT4, CRZ1, ZAP1, DAL5, PEX11,
HTA1, ZIP1, HTA2, BAR1, GAL80, and YDL182W,

determining the activity of the target,

10 wherein a change of the activity caused by a test agent is indicative of the test
agent as a candidate antifungal agent.

32. The method of claim 31, wherein the activity of the target is the level of the target
15 in a cell.

33. The method of claim 31, wherein the activity of the target is the ability of the
target to bind specifically to a test agent.

20 34. The method of claim 31, wherein the activity of the target is an activity associated
with a cell's response to an antifungal agent.

35. The method of claim 31, wherein the target is selected from the group consisting
of CIK1, YFLO54C, SKN7, DDR48, LEU3, FUS1, and GZF3.

25 36. The method of claim 31, wherein the target is selected from the group consisting
of AFR1, ARP7, AXL1, CRM1, CSE2, CSE1, FAR1, GPA1, GAL11, HSP82,
IPL1, KAR2, MFALPHA2, MSN5, MTR10, NPL3, PSU1, RPS0B, SEC72,
SLA2, SNI2, SNF5, SNF6, SNC2, SRP1, SRB4, STE2, STE4, SUP35, SWI3,
30 UBI3, UBI2, VAM3, YDJ1, and YCK2.

37. The method of claim 31, wherein the target is selected from the group consisting of KAR3, SPT4, CRZ1, ZAP1, DAL5, PEX11, HTA1, ZIP1, HTA2, BAR1, GAL80, and YDL182W.
- 5 38. The method of claim 31, wherein the target is CIK1.
39. The method of claim 31, wherein the target is in a cell.
- 10 40. An antifungal agent identified by the method of claim 31.